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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,377	03/01/2004	Scott W. Fowser	38190/269318	9342
826	7590	12/28/2007	EXAMINER	
ALSTON & BIRD LLP			LEO, LEONARD R	
BANK OF AMERICA PLAZA			ART UNIT	
101 SOUTH TRYON STREET, SUITE 4000			PAPER NUMBER	
CHARLOTTE, NC 28280-4000			3744	
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			12/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/790,377

Applicant(s)

FOWSER ET AL.

Examiner

Leonard R. Leo

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 7-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of the species of Figure 7 in the reply filed on October 16, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 7-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "elongate members" in claims 6 and 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4, 18-20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hammond.

Regarding claim 2, Figure 2 discloses transverse inlets 45.

Regarding claims 4 and 22, Figure 1 discloses the corrugations 23 contact the crests of an adjacent flow divider sheet.20.

Regarding claim 18, Hammond (column 2, lines 42-50) discloses a second manifold.

Regarding claims 19-20, Figure 2 discloses the manifolds define transverse port 45 and longitudinal 46 for the respective fluids.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of Tsunoda et al.

Hammond discloses all the claimed limitations except vanes.

Tsunoda et al discloses a heat exchanger comprising a plurality of flow divider sheets 42 having manifolds and a plurality of flow channels 64 defined by ridges 49, and vanes 51a-c (Figure 4) for the purpose of efficiently redirecting the transverse flow to minimize pressure losses.

Since Hammond and Tsunoda et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Tsunoda et al would have been recognized in the pertinent art of Hammond.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hammond vanes for the purpose of efficiently redirecting the transverse flow to minimize pressure losses as recognized by Tsunoda et al.

Claims 5 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of Ulbricht.

The device of Hammond lacks disconnected corrugated portions.

Ulbricht (Figures 1a and 8) discloses a heat exchanger comprising a plurality of flow divider sheets 1 having a plurality of flow channels 2 defined corrugations 39, wherein the sheets are disconnected (column 2, line 58 to column 3, line 4) for the purpose of providing mixing for uniform temperature distribution.

Since Hammond and Ulbricht are both from the same field of endeavor and/or analogous art, the purpose disclosed by Ulbricht would have been recognized in the pertinent art of Hammond.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hammond disconnected corrugated portions for the purpose of providing mixing for uniform temperature distribution as recognized by Ulbricht.

Claims 6 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond in view of Claudel et al.

The device of Hammond lacks elongate members.

Claudel et al discloses a heat exchanger comprising a plurality of flow divider sheets 1, 2 having manifolds and a plurality of flow channels 32 defined by beads 6, and elongate members 34 (Figure 13) for the purpose of aligning and supporting the sheets.

Since Hammond and Claudel et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Claudel et al would have been recognized in the pertinent art of Hammond.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hammond elongate members for the purpose of aligning and supporting the sheets as recognized by Claudel et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ LEONARD R. LEO /
PRIMARY EXAMINER
ART UNIT 3744

December 25, 2007